

FIG. 1 (PRIOR ART)

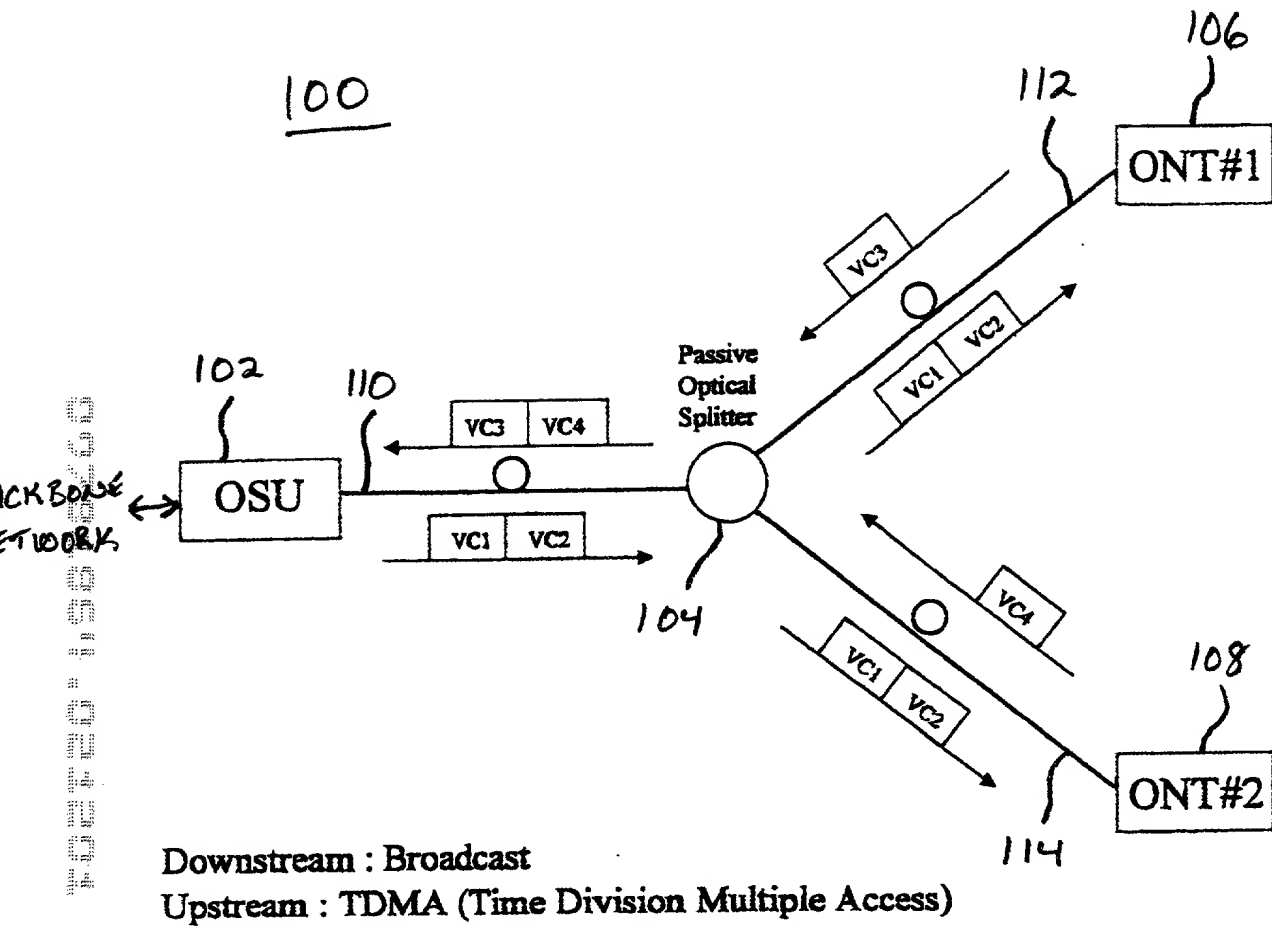
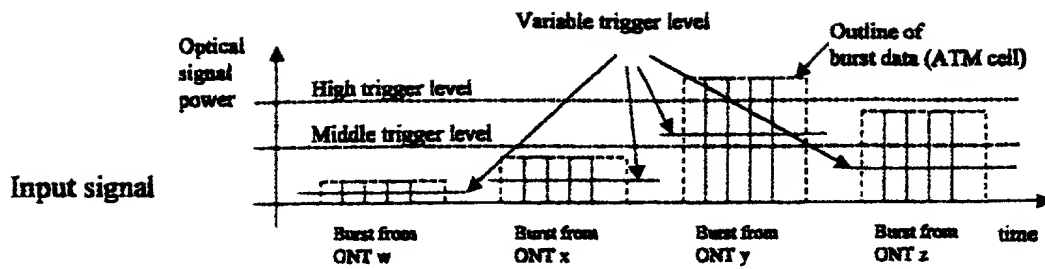


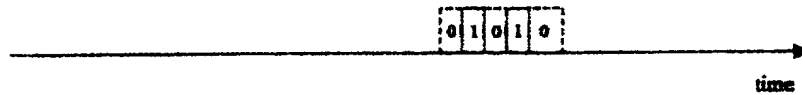
FIG. 2 (PRIOR ART)

(A)



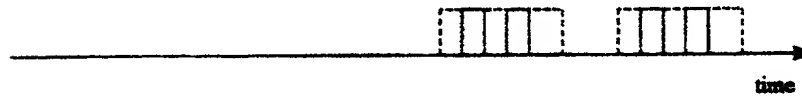
(B)

Case (a) : Output data - high trigger level



(C)

Case (b) : Output data - middle trigger level



(D)

Case (c) : Output data - variable trigger level



FIG. 3

[1] Downstream Frame boundaries

[2] Downstream Ranging Ploam cell

[3] Upstream Ranging Reply cell ( $T_d = 0$ )

[4] Upstream Ranging Reply cell ( $T_d > 0$ )

[5] Upstream cell after Ranging

[6] Downstream Ploam cell with Grants in 1st, 2nd, 3rd time slot

[7] 3 Upstream cell in 1st, 2nd, 3rd time slots after ranging

[8] Expansion of 3 Upstream cells showing position of bmr reset pulse

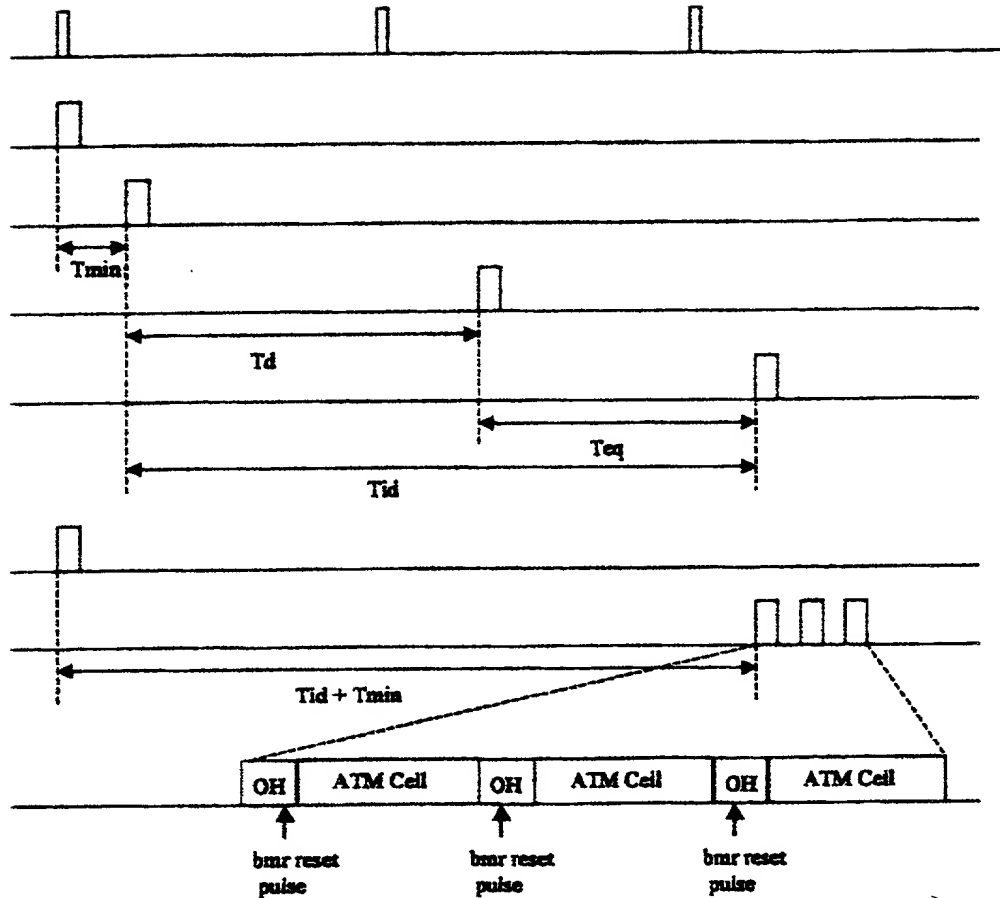


FIG. 4

400

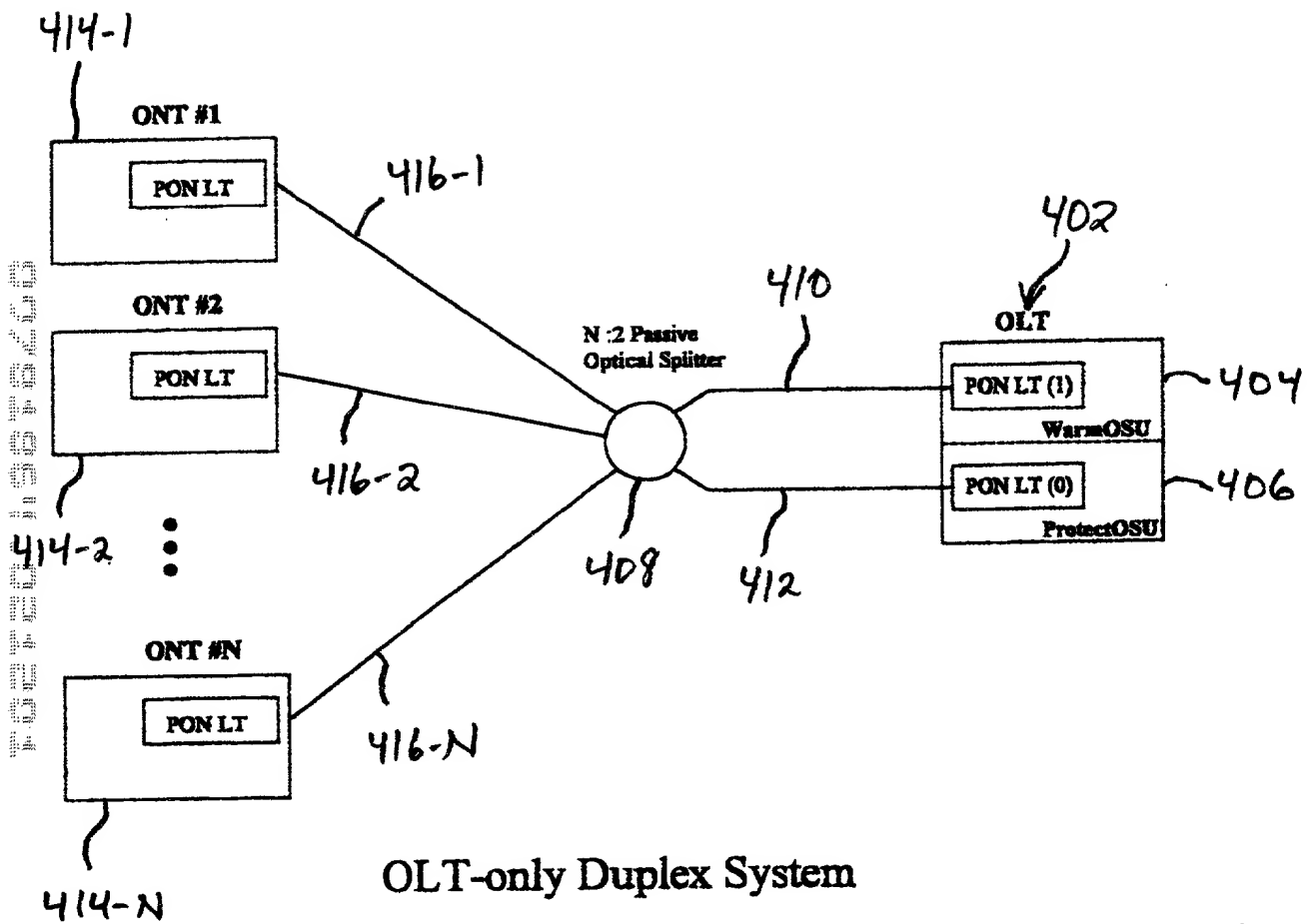
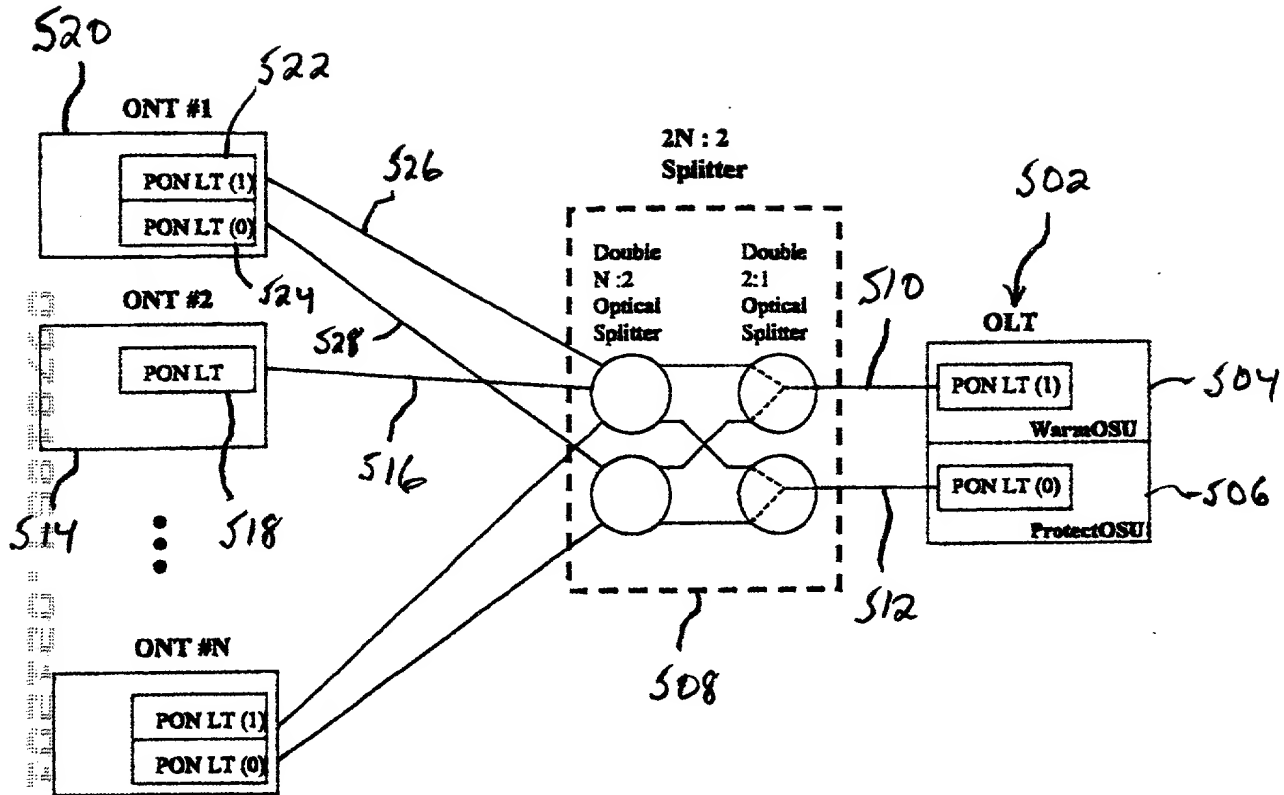


FIG. 5

500



Partial Duplex System

FIG. 6

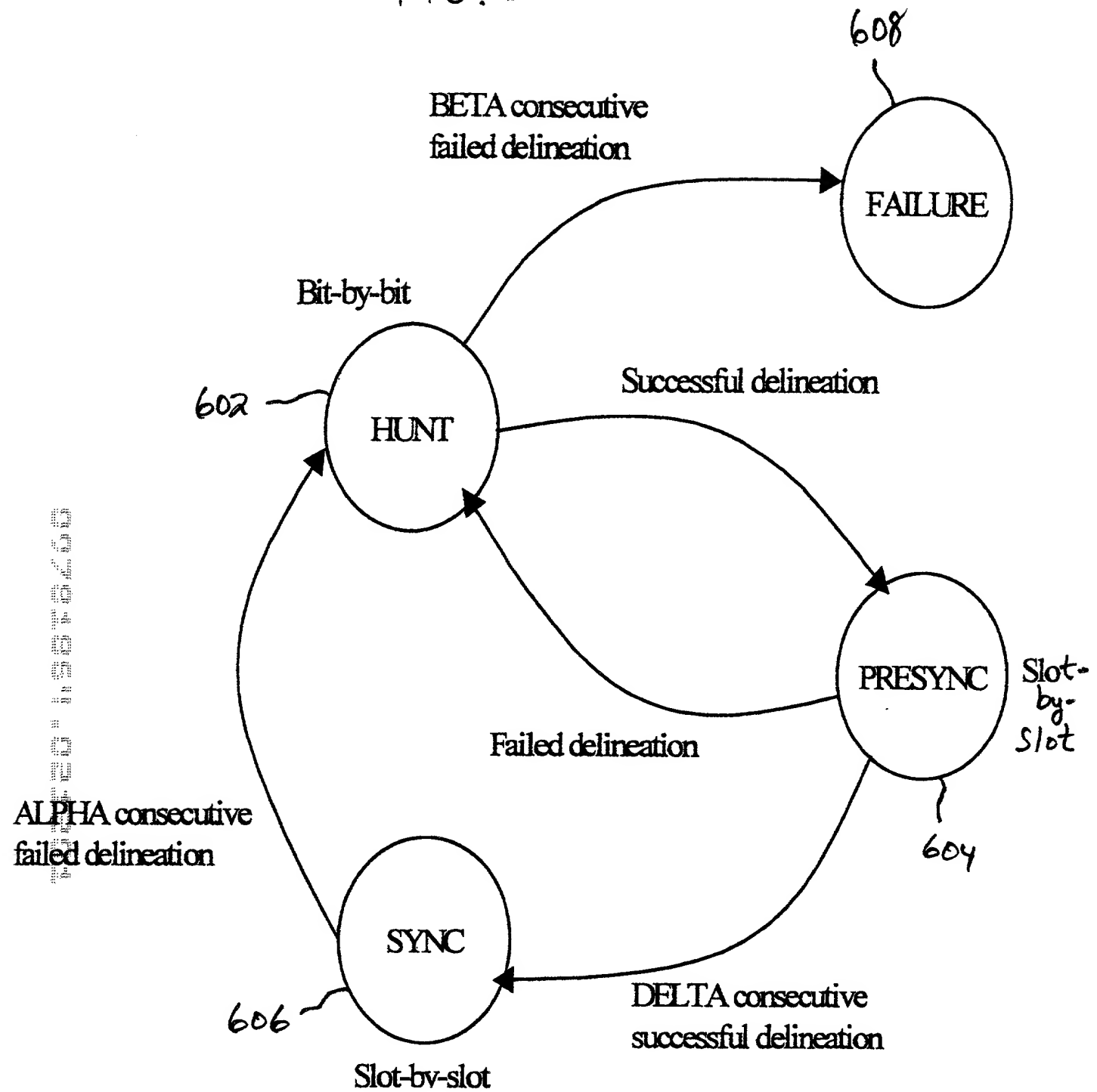
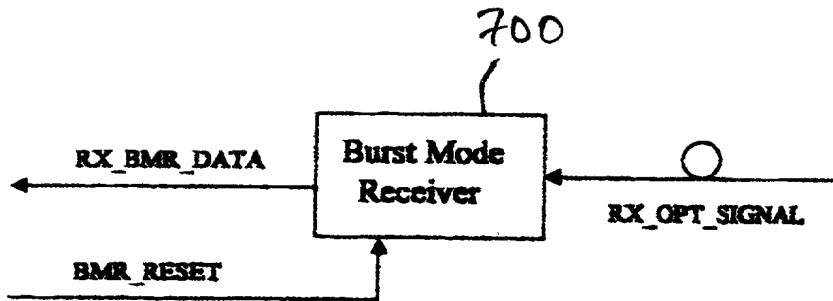


FIG. 7

(A)



(B)

Timing Reference at WarmOSU

(C)

RX\_OPT\_SIGNAL  
(Optical Signals  
received by burst  
mode receiver)

(D)

BMR\_RESET  
(Burst Mode Receiver  
Reset signals - spaced  
out by 449/448 bits)

(E)

RX\_BMR\_DATA  
(output of Burst Mode  
Receiver)

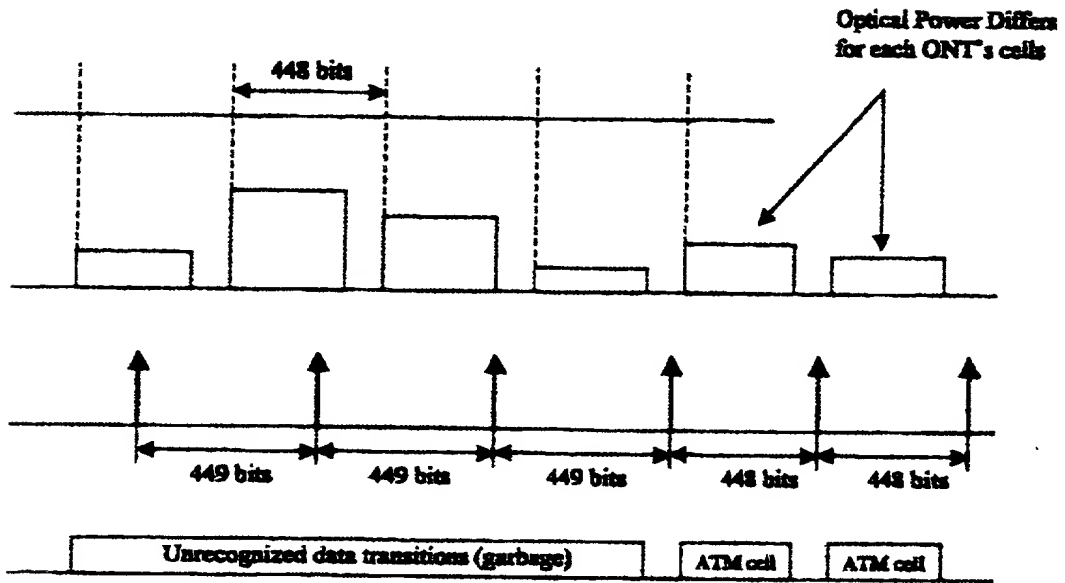


FIG. 8

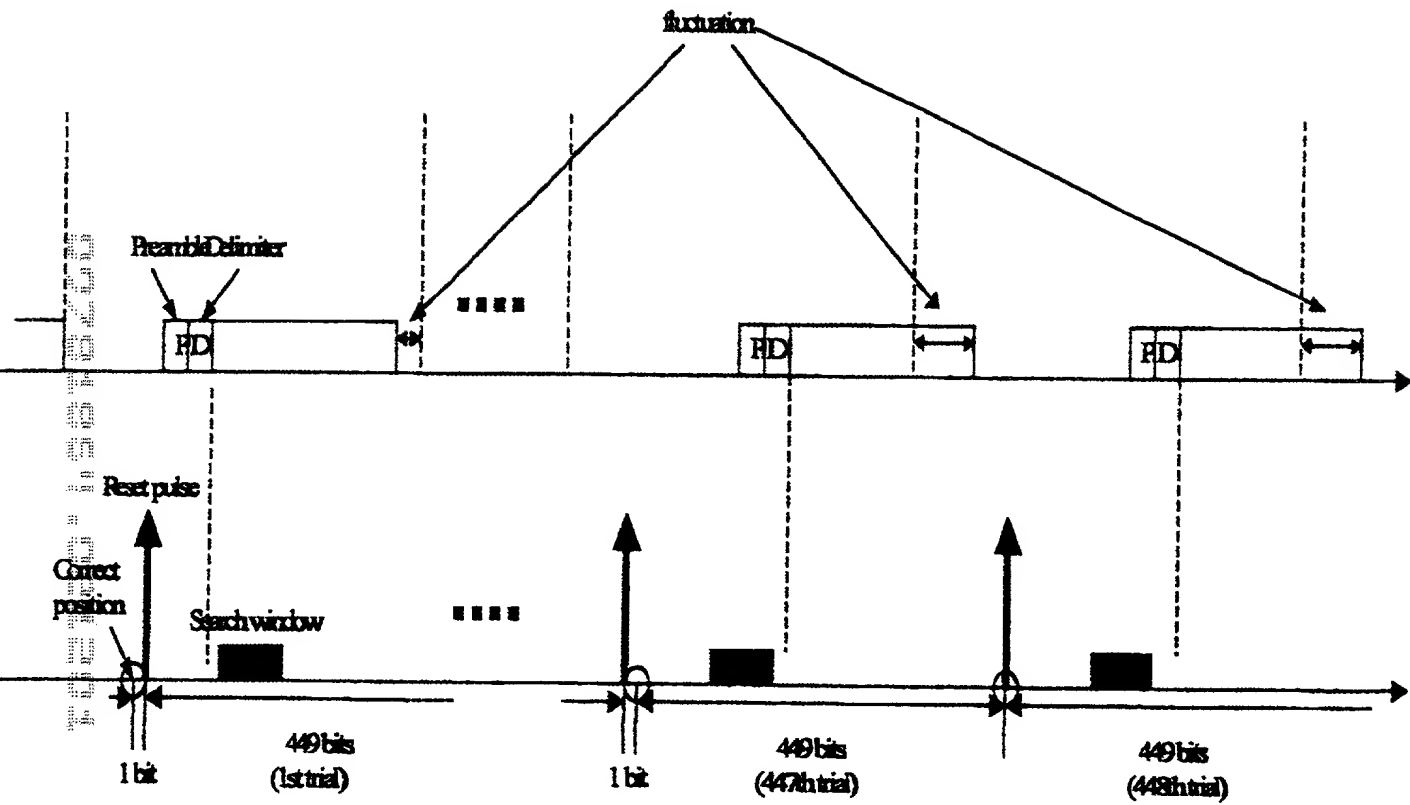




FIG. 9

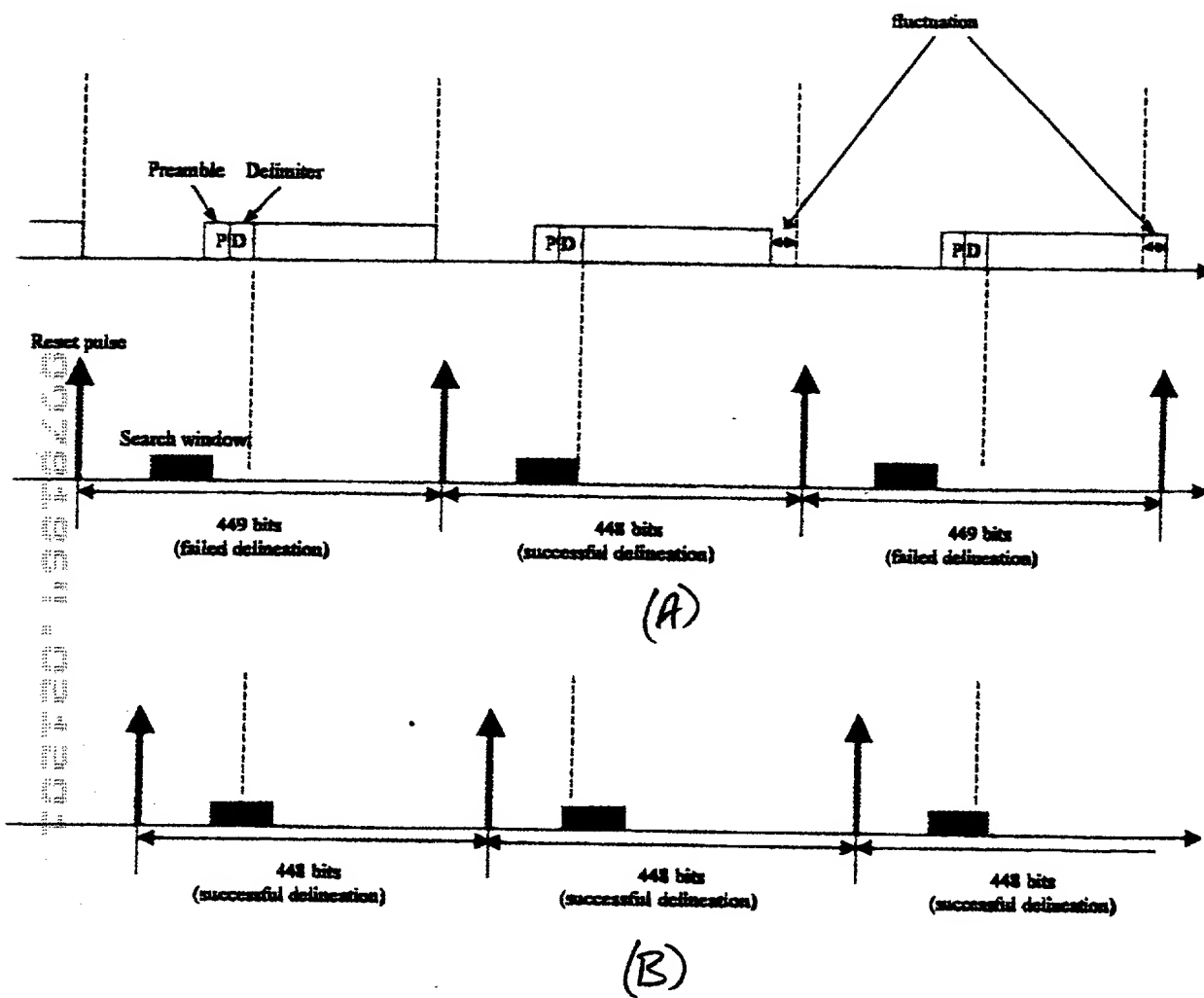
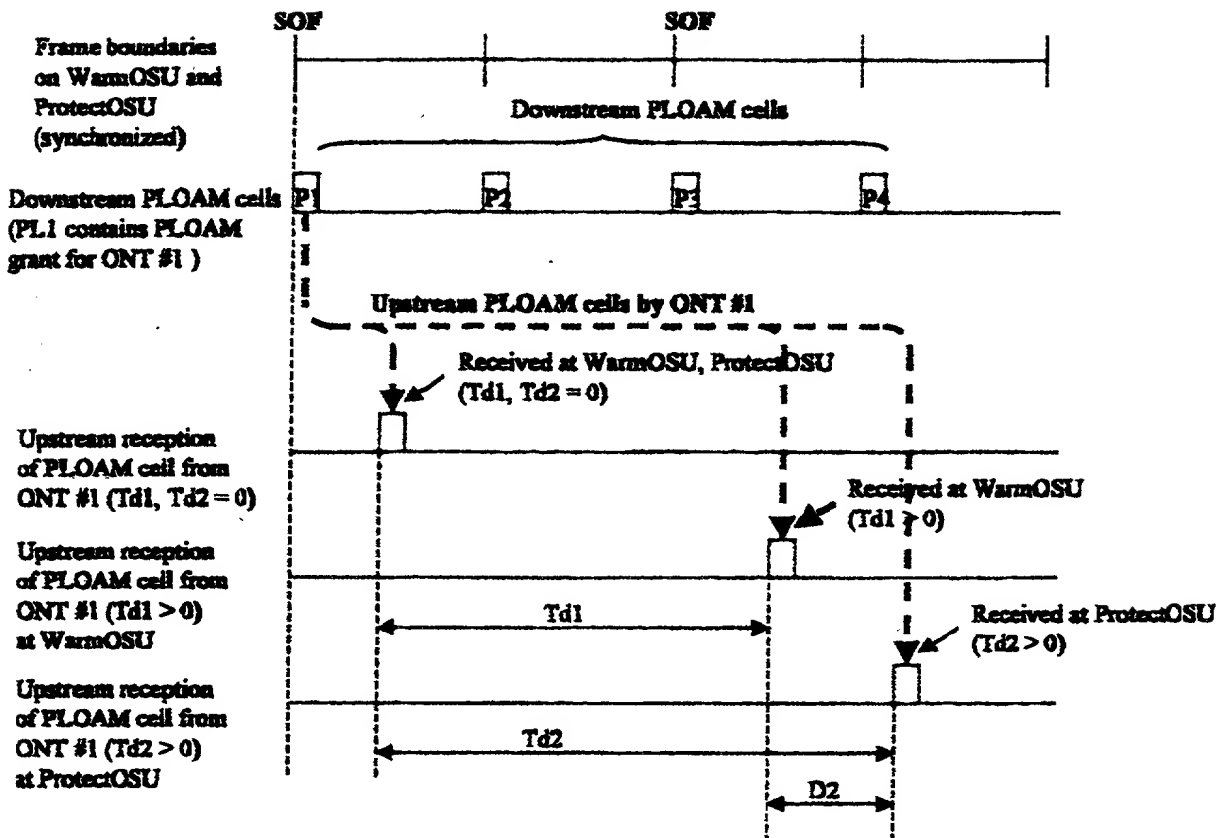


FIG. 10



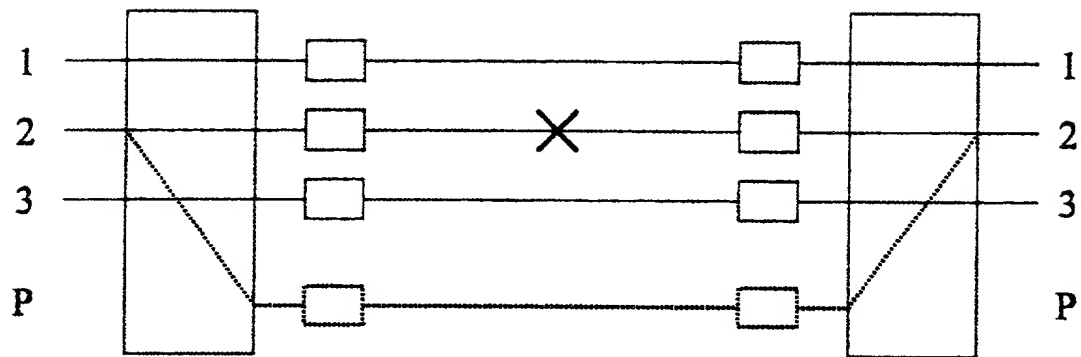
$Td1$  : delay measured at WarmOSU

$Td2$  : delay measured at ProtectOSU

$D2$  : time difference between start of frame in WarmOSU and ProtectOSU, due to difference in distance to splitter

\*SOF : Start of Frame

FIG. 11



1:N Protection (example N = 3)

FIG. 12

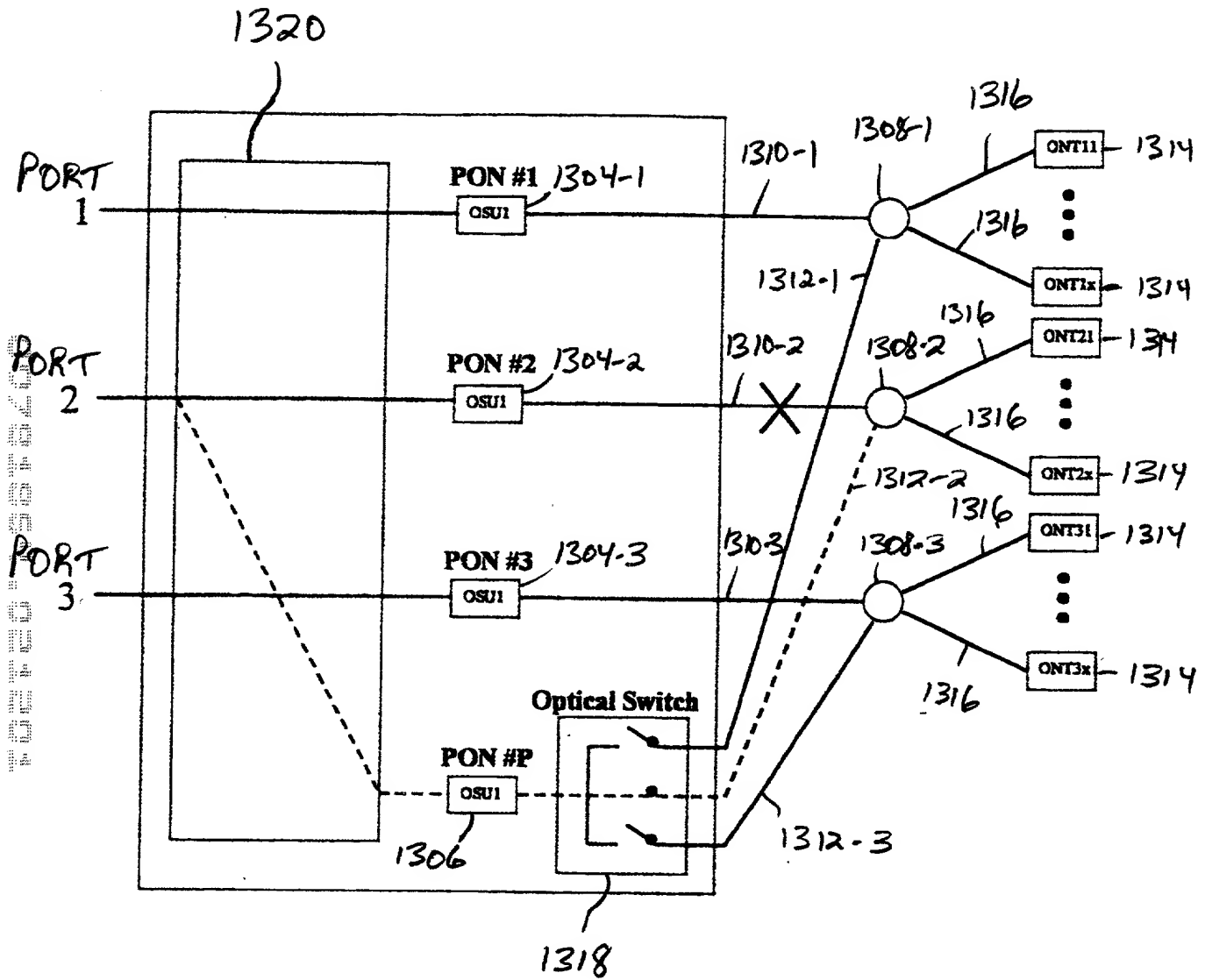
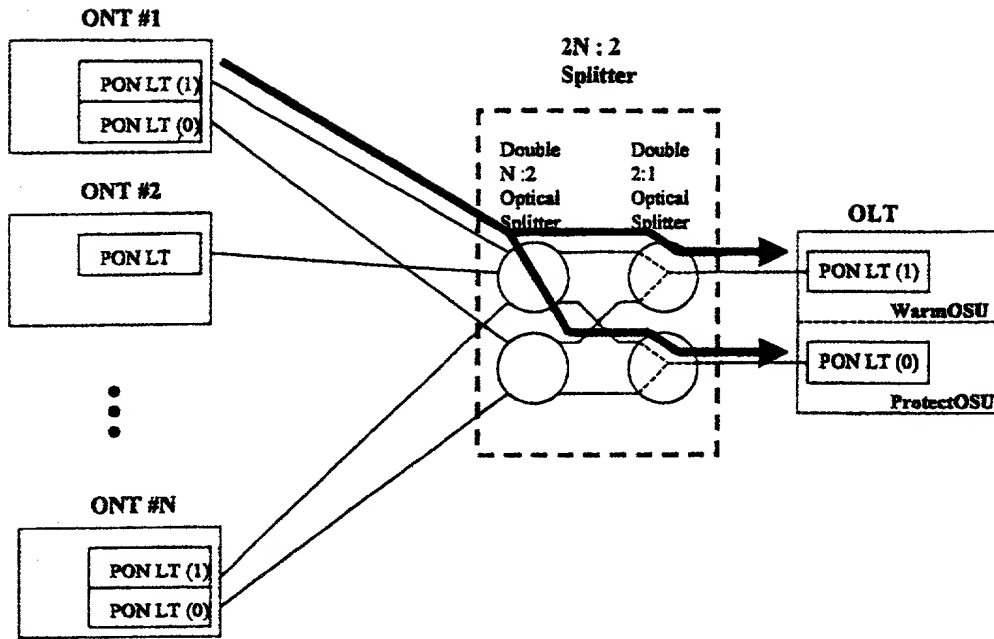
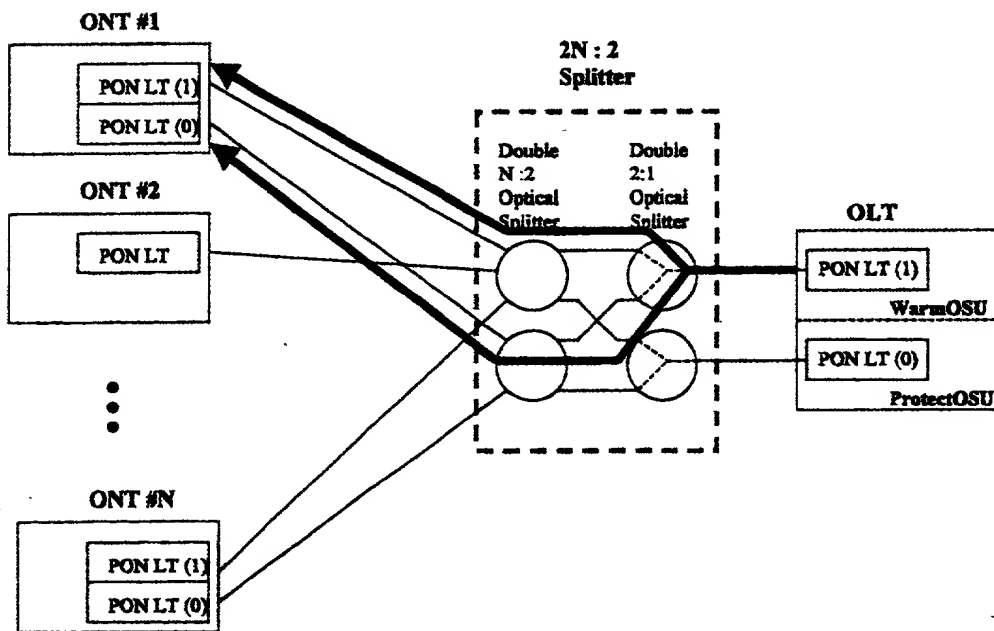


FIG. 13



Partial Duplex System

FIG. 14



Partial Duplex System